While the invention has been described in connection with a preferred embodiment, it is not intended to limit the scope of the invention to the particular form set forth, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

Claims

What is claimed:

1. A machine for removing water from a sump pit or similar water collecting vessel, comprising of a water ejector having a propulsion nozzle and a Venturi throat contained in a housing and mounted at the same elevation as it's discharge pipe. A controlling valve which communicates with a continuous pressurized water source via a public water system is controlled and operated by a float valve directly actuated by a float mechanism. The float valve is directly affected by the rise and fall of water in the sump pit. Said controlling diaphragm valve operates as a typical valve of this type, having two inner sub chambers separated by a solid flexible diaphragm. A hollow transfer tube connected to an opening in the upper sub chamber of the controlling valve contains water pressurized at the same pressure as the upper sub chamber of the controlling valve. Said hollow transfer tube also communicates between the float valve and controlling valve. The float valve is located inside the sump pit, in a position that allows it to react and respond to the changing level of water that accumulates in said sump pit. An adjustable timing control needle valve allows the installer of the pump to pre-set the

amount of pumping time, allotting a specific time to each pumping cycle.

Ejector is completely enclosed and directly connected to a discharge pipe or conduit for the removal and discharge of the sump water to the exterior of the building. Said discharge pipe has as part of it, a standard tee type fitting incorporated into it in such a way as to create turbulence and back pressure which facilitates the drawing up of sump water by the Venturi Ejector. Said Ejector has an independent suction pipe or conduit having a one way check valve of standard design, inserted into the suction pipe between the ejector and the sump water vessel. Said one way check valve prevents water from reverse flowing down the suction pipe should a clog develop in the discharge pipe. The ejector has an atmospheric vent utilizing the open end of the discharge pipe as a source of air entering the ejector housing. Said atmospheric venting prevents any chance for sump pit water to accidentally reverse flow into said pressurized water source. A second hollow tube also connects the upper sub chamber of the controlling valve to the lower sub chamber of the controlling valve in order to cause changes in the equalization of the pressures in the two chambers as needed to affect the opening and closing of the controlling valve. Said hollow transfer tube communicates with the float valve in the sump pit by means of the former enclosed tube by way of a tee fitting in the opening of the upper sub chamber of the controlling valve that connects the flexible tube to the upper sub chamber to the float valve in the sump pit and to the lower sub chamber of the controlling valve. This second tube has an integral one way check valve of standard design inserted into it between the tee fitting and the timing control needle valve, preventing the controlling valve from opening in case of a reverse flow of the pressurized potable water source.

2. A process for removing sump pit water comprising the steps of: A float valve is lifted by sump water rising above a normal level in the sump pit or vessel opening a valve connected directly to the float valve, thereby relieving pressure inside a hollow transfer tube connected to the controlling diaphragm valve. When the pressurized potable water source is relieved via a drain port on said float valve, the pressure in the upper sub chamber of the controlling valve is reduced and pressure in the lower sub chamber then overcomes the now-reduced pressure in the upper sub chamber and the flexible diaphragm lifts off the opening between the upper and lower sub chambers of the controlling valve and the pressurized potable water flows through said valve and into the ejector. Said flow of pressurized potable water through the ejector inlet nozzle increases propulsion and focuses the water flow into the Venturi throat across an opening in the enclosure containing the ejector. As this is connected to the suction pipe that connects to the water in the sump pit or vessel directly, the reduced pressure caused by this propulsion through the throat of the Venturi, creates a vacuum or suction effect causing water from the sump pit or vessel to be drawn up by the negative pressure and into the connecting chamber between the inlet nozzle and the Venturi throat. The sump water that is drawn up mixes with the pressurized potable water and both are ejected into the discharge pipe to the exterior of the building. As the water in the sump pit or vessel is removed, the sump water level lowers and the float drops back down to its lowest position thereby closing the float valve. When said float valve closes, it allows the hollow transfer tube connected from the controlling valve to the float valve to begin to re-pressurize. This repressurizing process is controlled by the setting of the timing control needle valve, hence slowing said repressurizing to affect delay in closing of the